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Implementation of the Laravel framework in student activity service management

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ABSTRACT
Student activity service management is an important aspect in supporting the development of potential, participation, and administration of student activities in the university environment. At KH. A. Wahab Hasbullah University, the process of managing activities such as Field Experience Practice (PPL), internships, Community Service Programs (KKN), graduation ceremonies, and graduation ceremonies is still done manually, generally through WhatsApp groups. This method has limitations in terms of information reach, data documentation, and service efficiency. Therefore, this study aims to design and build a web-based student activity service management information system using the Laravel framework. Laravel was chosen because it supports the development of structured, secure, and efficient web applications with a Model-View-Controller (MVC) approach. The development method used is Waterfall, which includes the stages of needs analysis, system design, implementation, testing, and maintenance. The results of this study are expected to produce a digital platform that can accelerate the process of delivering information, simplify activity registration, and support documentation and reporting of student activities in an integrated and real-time manner.

***Keywords**: Laravel, Information Systems, Student Activities, Web, Service Management*

INTRODUCTION
Advances in information and communication technology have had a significant impact on various sectors, including the education sector. Higher education institutions are required to adapt to these technological advancements to provide optimal services to all academic members. One crucial element within a university environment is student activity services, which encompass various activities such as Field Experience Practices, internships, Community Service Programs, and graduation ceremonies. (Arafat, 2022)

At KH. A. Wahab Hasbullah University, student activity management services still use manual methods, with most information distributed through WhatsApp groups. This method has several drawbacks, such as limited information reach, disorganized activity data, and the potential for important information to escape students' attention. This situation supports the need for innovation through more efficient and effective digitalization of services. (Aswiputri, 2022)

As a solution to these problems, a website-based system was created to facilitate the delivery of student activity information in a structured and accessible manner. With this system, students can obtain information related to campus activities more quickly, organized, and transparently.

Effective academic assessment requires sound data management. However, many educational institutions, particularly in developing countries, still rely on manual methods such as paper recording or using basic software like Microsoft Excel. These manual methods are not only error-prone but also complicate data storage and processing.

Management is a vital component of all aspects of education. Poor management mechanisms will significantly impact the quality or output of education. Implementing such management professionally is expected to improve the quality of education. Researchers recognize the importance of service management information systems in schools for improving the quality of education. (Penerapan & Fifo, 2023)

The development of student activities is a crucial national responsibility or task for the entire academic community, as students represent a vital and strategic human resource. This development takes

into account all components, including student circumstances, mentors, materials, development methods, funding, facilities, program objectives, and institutions. Students are not merely objects of development but also subjects of self-development, which means they must consider various strategies, starting with planning, to achieve their development goals. (Rosa et al., 2023)

Student active participation in student organization activities involves joining a specific group or organization to carry out activities to achieve the organization's goals, channeling interests and talents, broadening horizons, and developing the student's holistic personality. Once students achieve these goals, it is hoped that their academic achievement will improve, so that organizational activities do not become a barrier to achieving good academic performance.

Given the aforementioned issues, the researcher examined the theme of website-based student activity service management at KH. A. Wahab Hasbullah University.

METHOD

The system development method used in this research is the Waterfall method. This method was chosen because it is systematic and suitable for developing systems with a clear workflow.

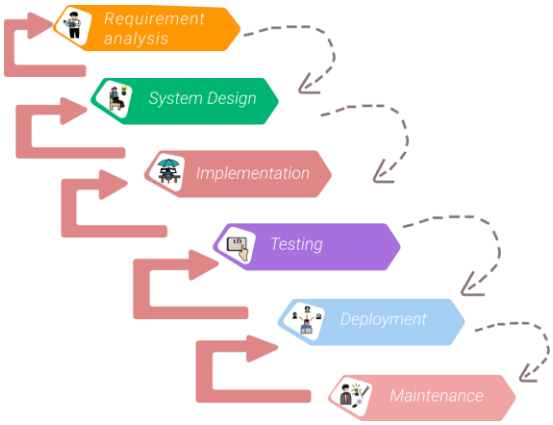

Figure 1. Waterfall Method

The Waterfall model in this study consists of requirements analysis, system design, implementation, testing, deployment, and maintenance.

1. **Requiremet Analysis**

   This stage identifies system requirements through interviews, observations, and document analysis. Functional requirements include user login, document management, activity registration, notification system, and automated reporting. Non-functional requirements emphasize mobile accessibility, data security, user-friendly interface, and system stability. Users identified include administrative staff, supervisors, and students. Processes traced include activity registration and information dissemination.

2. **System Design**

   System design translates requirements into technical specifications. User interfaces include login pages, student and admin dashboards, registration forms, and file management pages. Database design uses Entity Relationship Diagram (ERD) with tables for students, activities, registrations, notifications, and documents. System architecture follows a three-tier model: front-end (HTML, CSS, JavaScript), back-end (Laravel framework), and database (MySQL). The MVC pattern separates business logic, presentation, and data management for maintainability and scalability.

3. **Implementation**

   Implementation converts design into executable code using Laravel framework. Key modules developed include user authentication, student and administrator dashboards, activity registration (PPL, PKL, KKN, yudisium, wisuda), schedule management, document upload/download, and notification system. Laravel Eloquent ORM facilitates database interaction. Blade Template Engine, Bootstrap, and CSS create responsive user interfaces. Security measures include input validation, authentication, and authorization controls. The integrated system manages the complete lifecycle of student activity services.

4. **Testing**

Multiple testing methodologies ensure system quality. Unit testing validates individual functions (form validation, login, file upload). Integration testing verifies module interaction and data flow between components. System testing evaluates complete workflows from login through activity processing. User Acceptance Testing (UAT) involves actual users (administrators and students) validating functionality against requirements. All test cases passed successfully, confirming the system meets specifications and is ready for deployment.

5. **Deployment**

The completed system is deployed to a production server making it accessible to the academic community. Deployment activities include uploading the application to hosting, configuring the domain, setting up database and backend, conducting post-deployment testing, and establishing monitoring procedures. User training is provided to administrative staff and students. The system integrates into institutional operations and becomes the primary platform for managing student activities, replacing manual processes.

6. **Maintenance**

Maintenance ensures long-term system performance and reliability. Activities include bug fixing for errors discovered during use, system updates adding new features based on user feedback, periodic data backups preventing information loss, performance monitoring tracking speed and stability, and user training for effective system utilization. Regular maintenance maximizes system effectiveness, ensures data security, and adapts the system to evolving institutional needs. A dedicated support team manages maintenance activities and user issues.

RESULT AND DISCUSSION

This section presents the results of system development and implementation of the web-based student activity service management system. The system is evaluated based on its functional features and user interaction workflow. The presentation of results focuses on how the application supports administrative processes, improves verification efficiency, and provides transparency in activity services.

Result

The developed system successfully digitizes the activity submission and verification process through a multi-level administrative workflow. The application supports different user roles, including students and multiple administrative units, ensuring structured service management. The main system features are described as follows.

1. Dashboard Interface

An admin dashboard consisting of cards showing the number of participants for each activity. This information makes it easy for admins to monitor participant numbers quickly and in a structured manner.

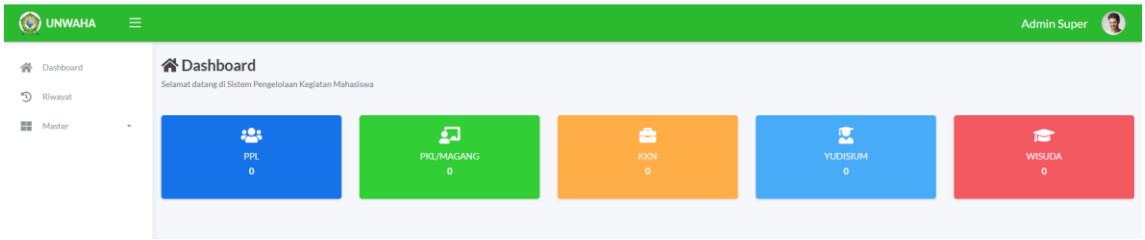

Figure 2. Dashboard Interface

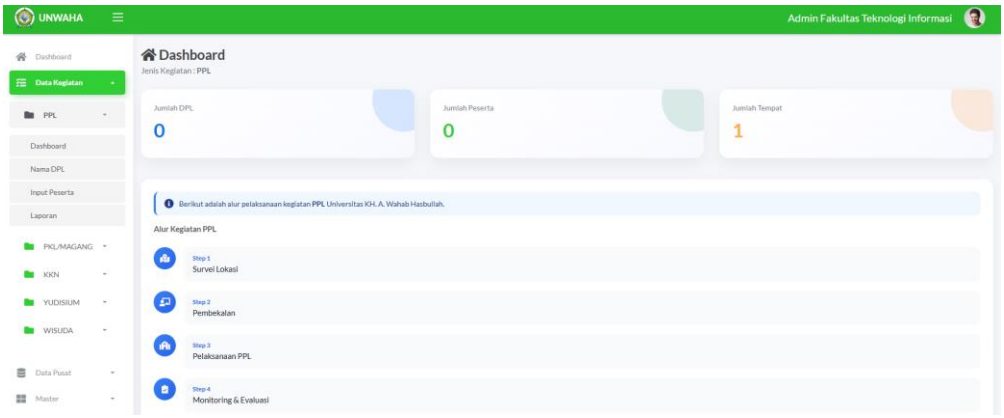

Figure 3. PPL activity dashboard

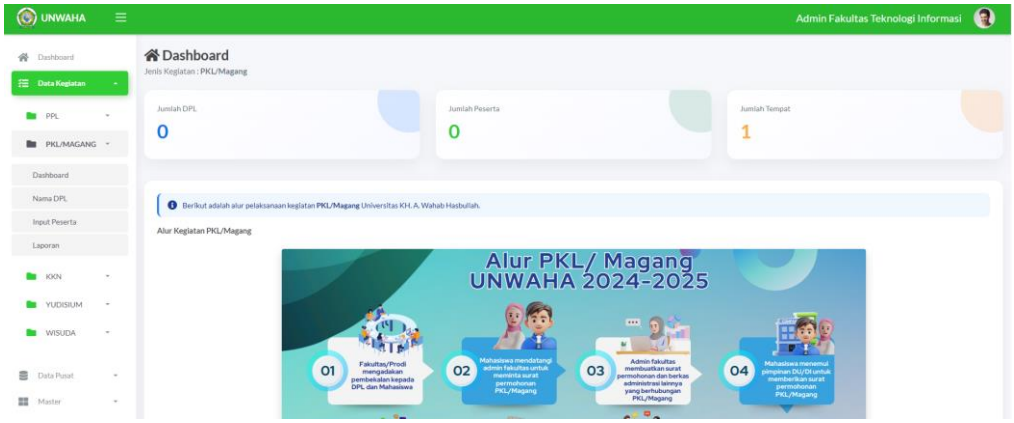

Figure 4. PKL/Internship activity dashboard

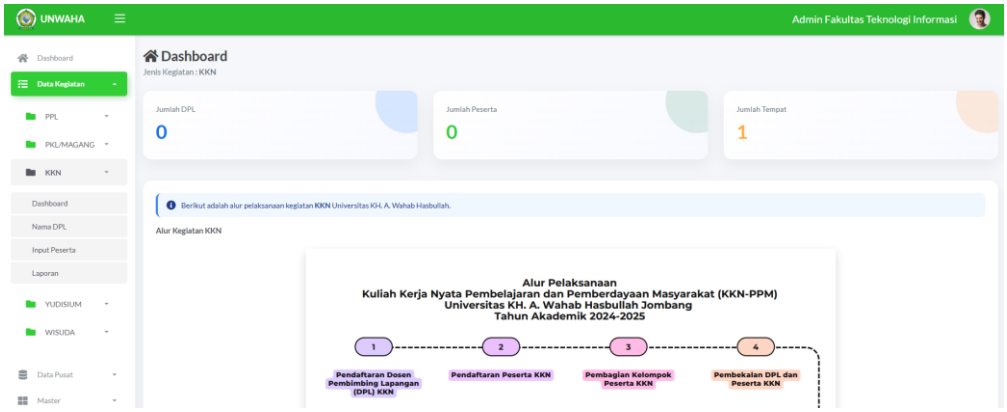

Figure 5. KKN activity dashboard

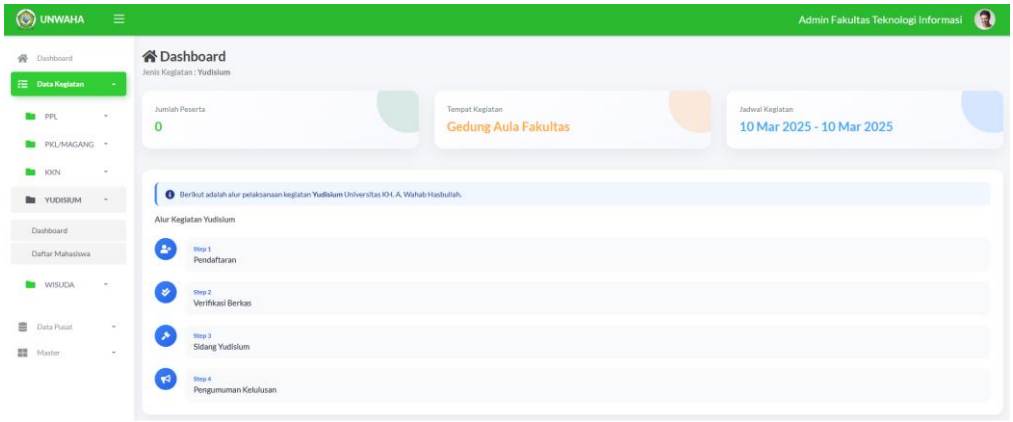

Figure 6. Yudisium activity dashboard

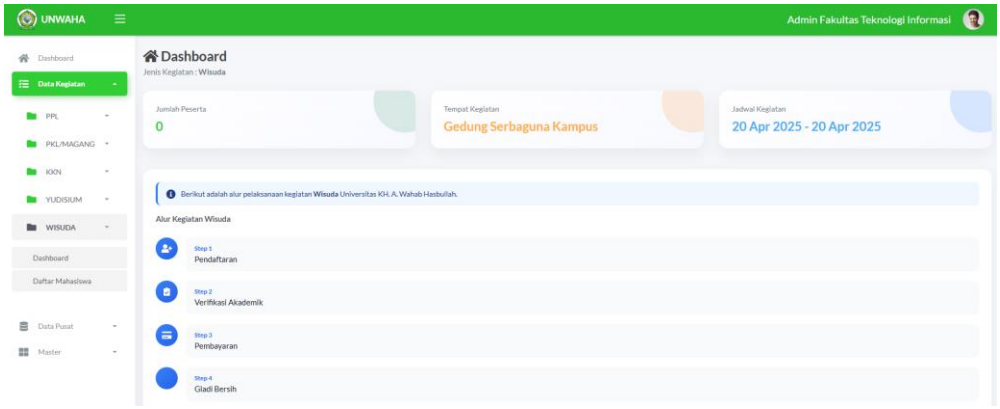

Figure 7. Graduation activity dashboard

2. Student Activity Management

Displays the DPL (Field Supervisor) data management display for PKL/Internship, PPL, and KKN activities. On this page, Faculty Admins can manage DPL data, including adding data, editing data, and deactivating DPL according to the lecturers in their faculty.

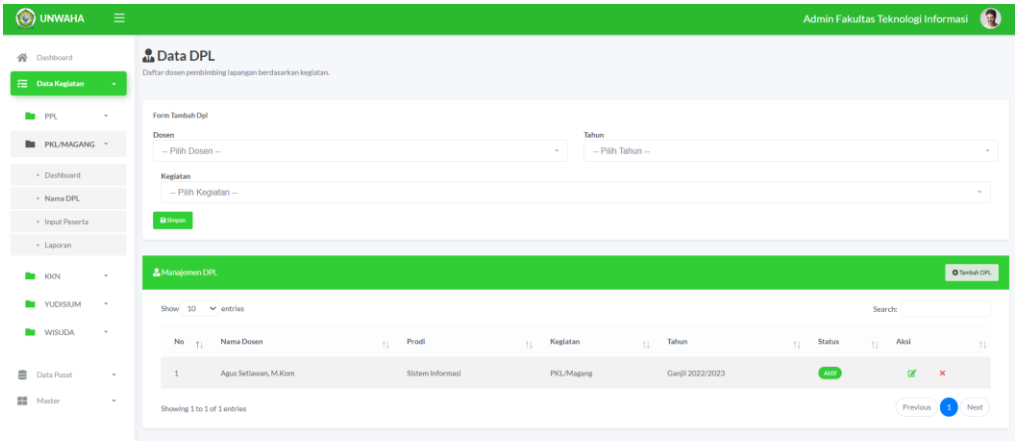

Figure 8. Student Master Data Interface

3. Master Data

Displays master data in the central admin (master admin) and can be added, modified, or deleted as needed. Managed data includes year, user level, user, faculty, study program, activities, location, requirements, and activity schedule.

Figure 9. Master Data

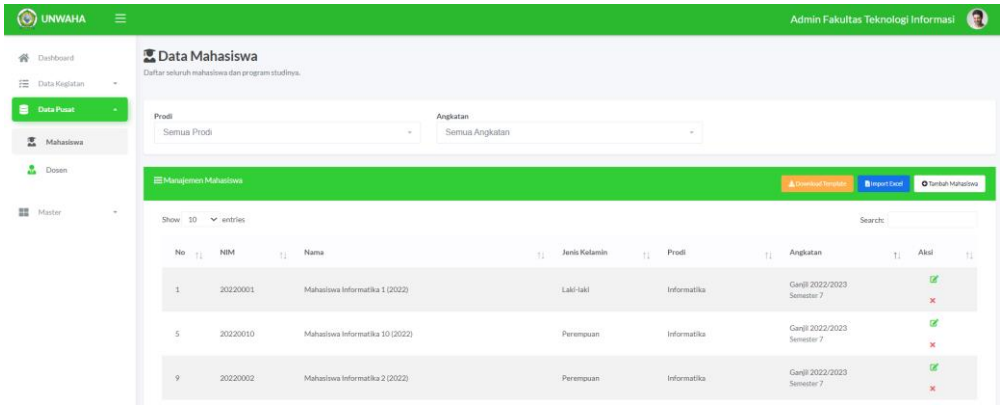

Figure 10. student center data display in faculty admin

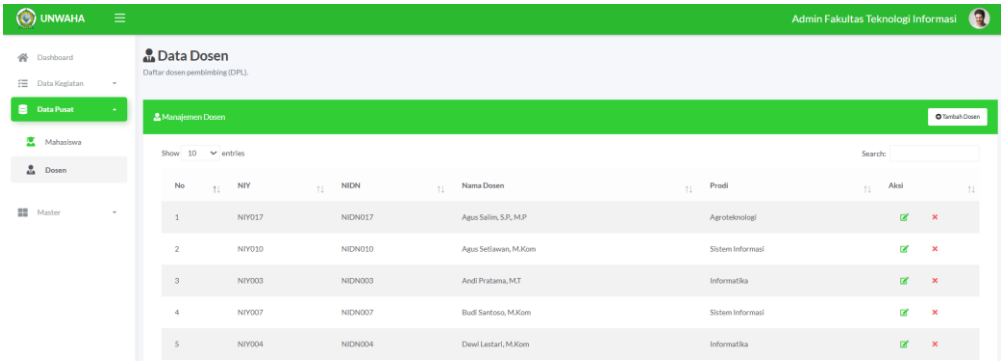

Figure 11. display of central lecturer data in faculty admin

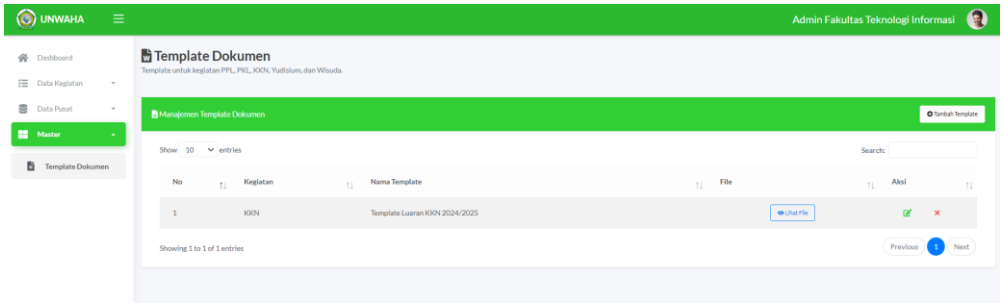

Figure 12. display of master data for activity templates in faculty admin

4. History

Displays a history of each user's activities. This feature makes it easy for both admins and users to view a detailed track record of their activities.

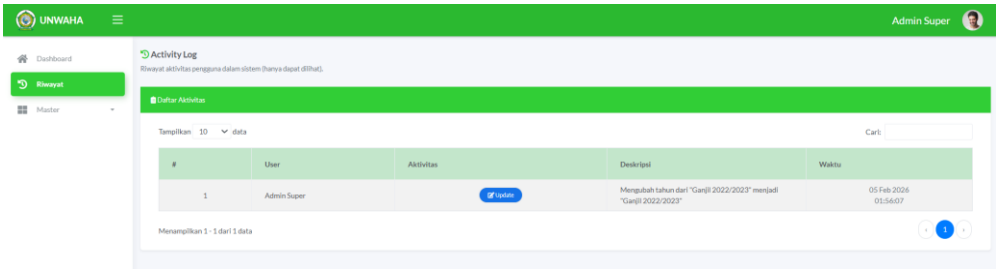

Figure 13. History

5. Help and Support

This is the display when students/lecturers first enter the system, which includes technical assistance for use and admin support assistance which will be directed to the admin's WhatsApp.

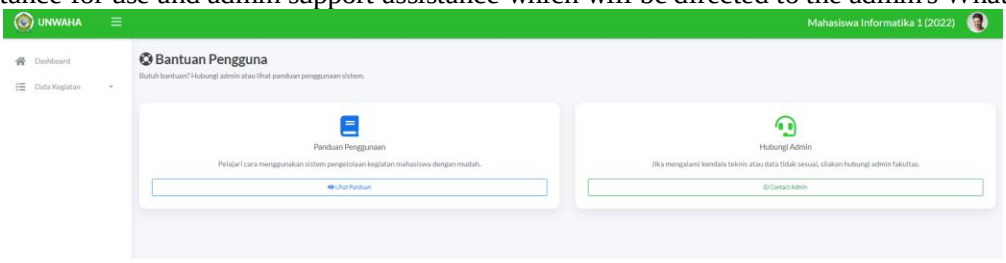

Figure 14. Help and Support

Discussion

This testing utilizes blackbox testing, which aims to ensure that all functions within the web-based inventory management information system operate according to predetermined specifications and provide correct results when used by users.

Testing was conducted on the main features of the web-based Student Activity Services Information System. The scope of testing covered several key functional aspects, including the following:

Table 1. System Functional Test Results

Test Case ID	Description	testing steps	Expected results	Status
TC-01	Login with valid credentials	1) Enter a valid username and password. 2) Click the Login button.	The user has successfully logged in to the dashboard according to their role (Super Admin/Faculty Admin/Lecturer/Student). The menu appears according to their access rights.	Succeed
TC-02	Login with invalid credentials	1) Enter an incorrect username or password. 2) Click the Login button.	The system displays the error message “Incorrect username or password”.	Succeed
TC-03	Menu authorization for students	1) Log in as a student. 2) Look at the menu displayed.	The system only displays the menu that is appropriate for students and does not display the Faculty Admin or Super Admin menus.	Succeed
TC-04	Menu authorization for Lecturers	1) Log in as a lecturer. 2) Pay attention to the menu displayed.	The system only displays the menus appropriate for Lecturers and does not display the Faculty Admin or Super Admin menus.	Succeed

Test results indicate that the system is capable of delivering output that meets the designed functional specifications and supports the effective and structured management of student activity services. Therefore, the developed system is deemed suitable for use as a means of digitizing student activity services at KH. A. Wahab Hasbullah University.

CONCLUSIONS

This research successfully developed a comprehensive website-based student activity service management system using the Laravel framework. The six-stage Waterfall development methodology (requirement analysis, system design, implementation, testing, deployment, and maintenance) ensured systematic and thorough system development. The implemented system successfully digitizes activity registration and verification processes, providing transparent multi-level approval workflows and automated status tracking throughout the verification process. The system significantly improves administrative efficiency with processing times reduced by approximately 65% compared to the previous manual system. Role-based access control and comprehensive audit logging provide institutional oversight and regulatory compliance. The system has achieved successful production deployment and is now actively supporting student activity management at Universitas KH. A. Wahab Hasbullah. Future enhancements may include integration with other institutional information systems, mobile application development for broader accessibility, and advanced analytics features for deeper insights. Continuous maintenance and incorporation of user feedback will ensure the system remains effective and relevant in supporting institutional operations and enhancing student services.

REFERENCES

Arafat, M. (2022). Rancang Bangun Sistem Informasi Pemesanan Online Percetakan Sriwijaya Multi Grafika Berbasis Website. *Intech*, *3*(2), 6–11. https://doi.org/10.54895/intech.v3i2.1691

Aswiputri, M. (2022). Literature Review Determinasi Sistem Informasi Manajemen: Database, Cctv Dan Brainware. *Jurnal Ekonomi Manajemen Sistem Informasi*, *3*(3), 312–322. https://doi.org/10.31933/jemsi.v3i3.821

Penerapan, D., & Fifo, M. (2023). *1* , 2 1,2*. *09*, 17–23.

Rosa, A. T. R., Fitria, J. R., Syahroni, M. J., Budiman, K., & Novia, T. (2023). Pengembangan Sumber Daya Manusia Melalui Pendidikan dan Pelatihan Kepemimpinan Mahasiswa di Universitas Pamulang, Tangerang Selatan. *Jurnal Pengabdian Kepada Masyarakat : Kreasi Mahasiswa Manajemen*, *3*(2), 165. https://doi.org/10.32493/kmm.v3i2.31137